

# ZENECA Ag Products

## MATERIAL SAFETY DATA SHEET

### Diquat Herbicide

Version: 2

Date issued: 03/26/99

MSDS No. US004645\_01

Date printed: 03/29/99

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### Section 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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Company	: Zeneca Agricultural Products 1800 Concord Pike Wilmington DE 19850
Phone number	: (302) 886-1000
Emergency phone	: Medical: 800-327-8633 (1-800 FASTMED) Chemtrec: 800-424-9300 Technical: 302-886-3000
Name used on label	: Diquat Herbicide
Product use	: Herbicide

A Registered Trade Mark of Zeneca Agricultural Products

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### Section 2 – COMPOSITION/INFORMATION ON INGREDIENTS

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Identity	CAS-no.	Typical %	Other information
diquat		36.4 %	
inerts		63.6 %	

Ingredients not precisely identified are proprietary or non hazardous.  
Values are not product specifications.

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### Section 3 – HAZARDS IDENTIFICATION

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Physical hazards:  
None

Health hazards:  
Irritant (eye, skin, respiratory passages, skin sensitizer). Harmful  
(oral)

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### Section 4 – FIRST AID MEASURES

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#### GENERAL ADVICE:

If a known exposure occurs or is suspected, immediately start the recommended procedures below. If further treatment is required, contact a Poison Center, a physician or the nearest hospital. Inform the person contacted of the type and extent of exposure, describe the victim's

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symptoms, and follow the advice given.

#### IF IN EYES:

Immediately flush with plenty of water for at least 15 minutes. Have eyes examined and treated by medical personnel. The degree of injury will depend on the amount of material that gets into the eye and the speed and thoroughness of the first aid treatment.

#### IF ON SKIN:

Wash material off the skin with plenty of soap and water. If redness occurs or diquat contacts a skin cut or an area of abrasion, get medical attention. Wash contaminated clothing and decontaminate footwear before reuse.

#### IF SWALLOWED:

Provided the patient is conscious, wash out mouth with water. Induce vomiting by sticking finger down throat. Immediately contact Zeneca's Emergency Information Network at 1-800-F-A-S-T-M-E-D (327-8633). If bentonite, activated charcoal or Fuller's earth is available, administer it.

#### IF INHALED:

Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is labored, give oxygen. Consult medical personnel.

#### MEDICAL ADVICE:

CALL ZENECA'S MEDICAL EMERGENCY INFORMATION NETWORK AT 1-800-327-8633 (Dial 1-800-F-A-S-T-M-E-D) at any hour to obtain toxicology and medical management consultation and paraquat analyses. Prompt treatment is essential and must be initiated immediately before signs and symptoms appear. Symptoms are prolonged and painful and may be delayed for days after swallowing. Treatment may include binding paraquat in the gut with suspensions of clay or charcoal; and removal of paraquat from the blood by prolonged charcoal hemodialysis. Do NOT administer oxygen; oxygen potentiates the toxicity of paraquat. Probable mucosal damage may contraindicate the use of gastric lavage. To be effective, treatment for diquat poisoning must begin immediately. Treatment consists of binding diquat in the gut with suspensions of activated charcoal or bentonite clay, administration of cathartics to enhance elimination, and removal of diquat from blood by charcoal hemoperfusion.

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### Section 5 – FIRE FIGHTING MEASURES

Flash point :

Not applicable.

Autoignition temperature :

Not applicable.

Flammable limits (STP): :

Not applicable.

EXTINGUISHING MEDIA:

Water fog, alcohol foam, carbon dioxide, dry chemical, halogenated agents.

PROTECTIVE EQUIPMENT:

Self-contained breathing apparatus with full facepiece and protective clothing.

NFPA RATING

Health

2

Fire

0

Reactivity

0

Unusual fire and explosion hazards:

Possible toxic smoke, vapors, fallout and runoff water can result from fires depending on extent of combustion and presence of other combustible materials. Contaminated buildings, areas, and equipment must be properly decontaminated before reuse.

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### Section 6 – ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Steps to be taken in case material is released or spilled:

Make sure all personnel involved in the spill cleanup follow good industrial hygiene practices. A small spill can be handled routinely. Use adequate ventilation and wear an air-supplied respirator to prevent inhalation. Wear suitable protective clothing and eye protection to prevent skin and eye contact.

METHODS FOR CLEANING UP:

Do not allow the material to enter streams, sewers or other waterways.

Spread a suitable absorbent such as clay on the spill, and shovel into an open drum.

Generously cover the contaminated areas with common, household detergent (e.g. TIDE, registered trademark of Proctor & Gamble Co.). Using a stiff brush and small amounts of water, work the detergent into the remaining spilled material forming a slurry. Brush the slurry into cracks and crevices and allow to stand for 2-3 minutes. Be careful to completely avoid skin or eye contact. Do not splatter on oneself or bystanders.

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Spread absorbent on the slurry liquid and shovel mixture into the open drum.

Rinse with small amount of water and use absorbent to collect the wash solution. Shovel into the open drum.

Seal drum and dispose of contaminated material in a facility permitted for hazardous waste. Large spills should be handled according to a spill plan. Otherwise, in case of emergency call, day or night, 800-424-9300, Chemtrec.

### Section 7 – HANDLING AND STORAGE

#### REQUIREMENTS FOR STORAGE ROOMS:

Containers should be stored in a cool, dry, well-ventilated area away from flammable materials and sources of heat or flame. Exercise due caution to prevent damage to or leakage from the container.

#### ADDITIONAL INFORMATION:

Do not store near feed, food, or within the reach of children.

### Section 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Occupational exposure limits

TLV/ACGIH diquat

8 hour TWA 0.5 mg/m<sup>3</sup>

diquat

10 minute STEL 1 mg/m<sup>3</sup>

#### TLV or suggested control value:

Minimize exposure in accordance with good hygiene practice.

#### ENGINEERING CONTROLS:

This product is intended for use outdoors where engineering controls are not necessary. If use conditions are different (e.g. product reformulation or repackaging), use ventilation adequate to maintain safe levels.

#### EYE PROTECTION:

Eye contact with the material should be avoided through the use of chemical safety glasses, goggles or a faceshield, selected in regard to exposure potential.

#### BODY PROTECTION:

Skin contact should be prevented through the use of impervious gloves, footwear, long-sleeved clothing, and wide brimmed hat. Remove contaminated clothing and wash before rewearing. Wash separately from other laundry.

#### RESPIRATORY PROTECTION:

No special respiratory protection is normally required. However, if the concentrate is spilled and allowed to stand, it can dry to a highly irritating dust. If needed, use MSHA-NIOSH approved respirator for pesticides.

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#### Other protective equipment:

An adequate supply of clean potable water should be available to allow thorough flushing of skin and eyes in event of contact with this compound.

#### Special precautions or other comments:

Prevent skin and eye contact with this material. Avoid breathing vapors or aerosols. A sensitized individual should not be exposed to the product which caused the sensitization.

### Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

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Form	: liquid
Physical state	: Soluble concentrate
Color	: dark brown
Odor	: odorless
Boiling point	: No data.
Vapor Pressure	: No data. at 20 °C Method: mmHg
Vapour density	: No data. (air = 1)
Specific gravity:	: 1.22 .. 1.27 at 20 °C
Solubility	: soluble
pH-value (quant.)	: 6 .. 7.5
Volatile by volume:	: No data.

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### Section 10 – STABILITY AND REACTIVITY

#### HAZARDOUS REACTIONS (CONDITIONS TO AVOID)

##### Stability:

Stable under normal conditions.

##### Incompatibility:

Strong alkalis and anionic wetting agents (e.g., alkyl and alkylaryl sulfonates). Corrosive to aluminum.

##### Hazardous polymerization:

Will not occur.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Combustion products: Carbon dioxide, carbon monoxide. Combustion or thermal decomposition will evolve toxic and irritant vapors.

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### Section 11 – TOXICOLOGICAL INFORMATION

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#### ACUTE TOXICITY (LETHAL DOSES)

##### LD50 Ingestion male rats

Dose : 810 mg/kg

##### LD50 Ingestion female rats

Dose : 600 mg/kg

Additional inform. : A single dose of this product is classified as "slightly toxic" by ingestion. Irritation of the mouth, pharynx, esophagus and stomach can develop following ingestion. The degree of injury will depend on the amount absorbed from the gut. Symptoms following ingestion of diquat concentrate may initially include nausea, vomiting, abdominal pain and severe irritation of the mouth, throat and esophagus. These can be followed by kidney failure and other internal organ involvement.

##### LD50 Skin absorption male rabbits

Dose : 260 mg/kg

##### LD50 Skin absorption female rabbits

Dose : 315 mg/kg

Additional inform. : This material is classified as "moderately toxic" by absorption. The degree of injury will depend on the amount absorbed. Because diquat is an ionized compound, it has a slow rate of absorption through intact skin. Prolonged or repeated contact may result in skin damage, thus allowing more of the chemical to be absorbed. This could result in systemic poisoning as evidenced by injury to internal organs, primarily the kidneys. The no-observed-effect level (noel) for dermal toxicity of diquat technical was found to be 5mg/kg/day in a 21 day study in rats.

##### LC50 Inhalation male rats

Dose : 121 mg/m<sup>3</sup>

##### LC50 Inhalation female rats

Dose : 132 mg/m<sup>3</sup>

Additional inform. : This substance is considered moderately toxic by inhalation. The degree of injury will depend on the airborne concentration and duration of exposure.

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Diquat is a water - soluble salt which has no measurable vapor pressure. Therefore, inhalation hazard from diquat vapor is minimal. If the concentrate is spilled and allowed to stand, it can dry to a highly irritating dust. Symptoms of inhalation overexposure may include headache, nosebleed, sore throat and coughing.

Dermal human

Additional inform. : Short contact periods with human skin are not usually associated with skin irritation; repeated and/or prolonged contact can result in skin irritation. Repeated and/or prolonged contact may cause dermatitis.

#### ACUTE TOXICITY (IRRITATION, SENSITIZATION ETC.)

Eye contact human

Results : IRRITANT

Additional inform. : This material may irritate human eyes following contact and could cause prolonged (weeks) impairment of vision. The degree of injury will depend on the amount of material that gets into the eye and the speed and thoroughness of the first aid treatment. Symptoms may include pain, tearing, swelling, redness, and blurred vision.

#### GENERAL INFORMATION ABOUT ACUTE OR OTHER TOXICITIES

General information

This description of toxicological properties is based on experimental results and experience with the material.

Other effects of overexposure:

No other adverse clinical effects have been associated with exposure to this material.

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### Section 12 - ECOLOGICAL INFORMATION

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#### ADDITIONAL INFORMATION ABOUT ECOLOGY

This material is toxic to fish and wildlife.

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### Section 13 – DISPOSAL CONSIDERATIONS

#### Disposal Method:

This product is toxic by inhalation and skin absorption and must be handled with caution. Do not contaminate waterways by cleaning of equipment or by disposal of wastes. Untreated effluent should not be discharged where it will drain into lakes, streams, or ponds. Discarded product is not a hazardous waste under RCRA, 40 CFR 261. Disposal should be in accordance with local, state or national legislation.

#### Container disposal:

Empty container retains product residue. Observe all hazard precautions. Do not distribute or make available, furnish or reuse empty container except for storage and shipment of original product. Remove all product residue from container and puncture or otherwise destroy empty container before disposal.

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### Section 14 – TRANSPORT INFORMATION

#### ROAD TRANSPORT DOT

Corrosive liquid, n.o.s. (contains diquat as dibromide salt), 8, UN1760, PG III.

RQ = 1000 lbs. (450 kgs)

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### Section 15 – REGULATORY INFORMATION

#### HAZARDOUS INGREDIENTS

diquat

Other regulations, restrictions and prohibitions

TSCA (Toxic Substances Control Act) Regulations, 40CFR 710:

This product is a pesticide and is exempt from TSCA regulation.

Other Determined Regulations:

California Proposition 65: WARNING. This product contains a chemical known to the State of California to cause cancer.

EPA

EPA Registration no.: 10182-353



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### Section 16 – OTHER INFORMATION

We assigned NFPA and HMIS ratings to this product based on the hazards of its ingredient(s). Because the customer is most aware of the application of the product, he must ensure that the proper personal protective equipment (PPE) is provided consistent with information contained in the product MSDS.

This information is intended solely for the use of individuals trained in the particular hazard rating system.

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